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Markman Reply Brief Part One

**IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF OHIO**
Western Division

THE PROCTER & GAMBLE COMPANY,)	
)	
Plaintiff,)	
)	Civil Action No. C-1-02-393
v.)	
)	Hon. Walter Herbert Rice (Chief Judge)
THE COCA-COLA COMPANY,)	Hon. Sharon L. Ovington (Magistrate)
)	
Defendant.)	
)	

**THE COCA-COLA COMPANY'S REPLY BRIEF TO THE
PROCTER & GAMBLE COMPANY'S OPENING CLAIM CONSTRUCTION BRIEF**

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I. INTRODUCTION

P&G's interpretation of the claim phrase "acid component comprising a mixture of citric acid and malic acid" as referring to "the total acids in the product, which, at a minimum, include citric acid and malic acid" (P&G Br. at 2, 13) is a superficial, result-oriented construction that conflicts with the express language of the claims. Although P&G asserts that its interpretation is "a straightforward construction for the claims at issue based on the intrinsic evidence of record" (P&G Br. at 1), its construction fails to properly take into account representations made in the patent specification and the demonstrations and accompanying remarks made during patent prosecution to gain allowance of the claims. P&G's overbroad construction instead attempts to cover beverages that were specifically disparaged in the patent specification and disclaimed during patent prosecution.

The '847 patent claims taken as a whole, consistent with the intrinsic evidence of record, were only intended to cover a beverage having a specified amount of an acid component comprising (1) the acids naturally present in the base juice and (2) a mixture of citric acid and malic acid discretely added to the base juice in a defined ratio. Throughout the '847 patent specification, P&G consistently required -- either through a premix or via direct addition -- the presence of such added acids to solubilize the calcium and to impart desirable taste qualities to the juice. The prosecution history is in accord and, in fact, goes further to affirmatively disparage and disclaim any calcium-supplemented juice beverage that did not employ a premix addition of citric acid and malic acid.

Having trumpeted such a requirement throughout the specification and having prevailed upon the patent examiner to allow its claims based on that distinction, P&G cannot now abandon the requirement for the presence of added acids in the final juice product. Moreover, P&G's construction is not only legally unsupportable, but would render the claims invalid as well.

Under P&G's overbroad construction of the claims, its claims would fail to meet the written description and enablement requirements of 35 U.S.C. § 112.

II. P&G'S CLAIM INTERPRETATION CONFLICTS WITH THE EXPRESS CLAIM LANGUAGE AND THE INTRINSIC EVIDENCE THAT PROVIDES THAT THE CLAIMED BEVERAGE INCLUDES AN ACID COMPONENT THAT REQUIRES A "MIXTURE" OF ADDED CITRIC AND MALIC ACIDS IN ADDITION TO ANY ACIDS NATURALLY PRESENT IN THE BASE JUICE

A. P&G's Interpretation of the Disputed Phrase Fails to Consider the Claim Language in Its Entirety

To interpret the disputed phrase "acid component comprising a mixture of citric acid and malic acid," P&G engages in precisely the sort of erroneous claim construction that has been condemned by the Federal Circuit. P&G first dissects the phrase up into individual words and then strings together selective dictionary definitions for each word to arrive at a definition that is arguably plausible in the abstract yet illogical and nonsensical when viewed in the actual context of the claim taken as a whole and the intrinsic evidence of record.

As noted by the Federal Circuit in *Anderson v. International Engineering & Manufacturing, Inc.*, 160 F.3d 1345, 1348-49 (Fed. Cir. 1998), "dictionary definitions of ordinary words are rarely dispositive of their meaning in a technological context," and "[a] word describing patented technology takes its definition from the context in which it was used by the inventor." Thus, "[w]hile certain terms may be at the center of the claim construction debate, the context of the surrounding words of the claim also must be considered in determining the ordinary and customary meaning of those terms." *Brookhill-Wilk 1, L.L.C. v. Intuitive Surgical, Inc.*, 334 F.3d 1294, 1299 (Fed. Cir. 2003); *see also Abbott Labs. v. Syntron Bioresearch, Inc.*, 334 F.3d 1343, 1350-51 (Fed. Cir. 2003) ("The usage of the disputed claim terms in the context of the claims as a whole also informs the proper construction of the terms."). The use of the dictionary, therefore, is but the starting point, not the end of the analysis.

Three flaws are immediately apparent with P&G's selective reliance on dictionary definitions in a vacuum. First, P&G's construction reads the word "mixture" completely out of the claim. The claim calls for an "acid component comprising a mixture of citric acid and malic acid," not merely an "acid component comprising citric acid and malic acid." The first phrase should necessarily be somewhat narrower than the second phrase. P&G's proposed construction, "the total acids in the product, which include, at a minimum, citric acid and malic acid," however, erases any meaningful distinction between the phrases. Any construction which renders the word "mixture" surplusage is presumptively not the correct one. *See Apple Computer, Inc. v. Articulate Sys., Inc.*, 234 F.3d 14, 25 (Fed. Cir. 2000) (reversing summary judgment when district court's claim interpretation read the word "help" out of the claim).

Second, P&G relies on a definition for "mixture" in non-technical dictionaries and an intentionally selective definition at that. P&G Br. at 14. The Federal Circuit has held that "a general dictionary definition is secondary to the specific meaning of a technical term as it is used and understood in a particular technical field." *Hoechst Celanese Corp. v. BP Chems. Ltd.*, 78 F.3d 1575, 1580 (Fed. Cir.), *cert. denied*, 519 U.S. 111 (1996); *see also Transclean Corp. v. Bridgwood Servs., Inc.*, 290 F.3d 1364, 1375 (Fed. Cir. 2002). Coca-Cola, on the other hand, relies on the definition in a scientific dictionary that is very different from the ones proffered by P&G:

n. Chemistry, the product of two or more substances mixed together, but not chemically combined. Mixtures can be separated mechanically by distillation, freezing, melting, etc. Compare **compound**. [from Latin *mixtura*, from *miscere* to mix]

THE AMERICAN HERITAGE DICTIONARY OF SCIENCE (1986) (emphasis added) (Exh. 20).¹

P&G, of course, is loath to advocate such a definition because there is no mixing of acid ingredients if one relies solely upon the acids naturally found in the base juice. Presumably, for that reason, P&G fails to point out to the Court that the very dictionaries it relies upon include other definitions of “mixture” that are entirely consistent with the scientific definition of “mixture”:

1a : an act, process, or instance of mixing . . .

* * *

2 [ME, *fr.* L *mixtura*, *mistura* (also, act of mixing)]: a product of mixing

WEBSTER’S THIRD NEW INTERNATIONAL DICTIONARY UNABRIDGED (1986) (P&G Exh. 12).

1. Something produced by mixing.

* * *

4a. The act or process of mixing. **b.** The condition of being mixed.

THE AMERICAN HERITAGE DICTIONARY SECOND COLLEGE EDITION (1985) (P&G Exh. 12).

Finally, P&G’s claim interpretation fails to appreciate that the claimed level of the acid component was drafted as an element entirely separate from the 45% fruit juice component, and not as an additional limitation on the base fruit juice. To the extent there is citric acid and/or malic acid in the base juice, there will necessarily be some overlap between elements (b) and (c) of claim 1. Both parties agree that the acids naturally present in the base juice are to be counted as part of the total acids in the finished product. However, one cannot read the claim in its entirety as intending the natural acids of the base juice alone to satisfy the recited “mixture of citric acid and malic acid” portion of the claimed “acid component.” Accordingly, as discussed in Coca-Cola’s opening brief, the phrase “mixture of citric acid and malic acid” with the recited

¹ For the Court’s convenience, Coca-Cola has consecutively numbered its exhibits so that “Exhs. 1-28” refers to the exhibits attached to Coca-Cola’s opening brief and Exhs. 29-31 refers to the exhibits attached to this reply brief. “P&G Exh. *” refers to an exhibit attached to P&G’s opening brief.

ratio of citric acid:malic acid necessarily refers to the acid mixture that is added to the base juice. *See Coca-Cola Br.* at 7-9, 12-13, 22-24. Any doubt on this issue is conclusively resolved in Coca-Cola's favor when the patent specification and prosecution history are examined. *DeMarini Sports, Inc. v. Worth, Inc.*, 239 F.3d 1314, 1324 (Fed. Cir. 2001) (ordinary meaning of claim term determined not in a vacuum but in context of the written description and the prosecution history).

**B. P&G's Interpretation of the Disputed Phrase
Conflicts with the Teachings of the Patent Specification**

P&G attempts to bolster its position by arguing that it defined "acid component" in its specification consistent with the interpretation that it now advances in this Court. P&G Br. at 15-16 & n.10. Several claim terms are expressly defined in Section B (the definitional section) of the '847 patent. *See* Exh. 1 at col. 4, lns. 40 - col. 5, ln. 17. That section of the patent, however, does not contain any definition whatsoever for the phrase "acid component." Instead, P&G cobbles together its asserted definition of "acid component" from a strained reading of a paragraph in column six of Section C of the '847 patent disclosure. *See* Exh. 1 at col. 6, lns. 1-6.

P&G glosses over completely the disclosure in the immediately preceding column that functionally defined "acid component" as "[a] key component in the fruit juice beverages and juice concentrates of the present invention from the standpoint of solubilizing the calcium and providing desirable taste properties." Exh. 1 at col. 5, lns. 56-59. This purpose of the invention is achieved by using an "acid component" that comprises a "mixture" of citric and malic acids and optionally other edible acids such as phosphoric acid and fumaric acid. Exh. 1 at col. 5, lns. 59-68 (emphasis added). This is significant because, as discussed in greater detail below, P&G had already admitted in the early technical background section of the patent that the natural acids of the base juice *inhibited* effective calcium solubilization. Exh. 1 at col. 2, lns. 10-25. Thus, it

is apparent that it is the added mixture of acids, not merely the natural juice acids, that are necessarily responsible for solubilizing the calcium and providing desirable taste properties.

The column six disclosure to the effect that “‘total acids’ include those naturally present, plus any acids added,” Exh. 1 at col. 6, lns. 4-6, was never intended to trump the functional definition in column five of the ‘847 patent. While P&G has read the disputed passage to mean those acids naturally present, plus acids added, if any, P&G ignores the fact that the word “plus” in the quoted passage is clearly conjunctive, not disjunctive, and that other definitions in the very dictionaries P&G relies upon define “any” to mean all, but at least one. For example, Webster’s dictionary defines “any” to variously mean:

1b: one, no matter what one: EVERY
* * *

2: one, some, or all indiscriminately of whatever quantity: **a:** one
or more: not none . . . **b:** ALL

WEBSTER’S THIRD NEW INTERNATIONAL DICTIONARY UNABRIDGED 97 (1986) (emphasis added) (Exh. 30). Similarly, one of the definitions of “any” in the American Heritage dictionary is “[t]he whole amount of; all.” THE AMERICAN HERITAGE DICTIONARY SECOND COLLEGE EDITION 117 (1985) (emphasis added) (Exh. 31). Thus, while the addition of certain acids like fumaric acid may be optional,² “total acids” must include some added citric and malic acids. As

² P&G contends that the fact that the specification indicates that the mixture of citric and malic acids “can be present in their undisassociated form, but are typically present as the respective citrate and malate species,” Exh. 1 at col. 5, lns. 61-63 (emphasis added), reinforces its position that the claim has no limitation or requirement as to the source of the acids. P&G Br. at 16-17. The quoted language in the abstract, however, does not purport to address the question of the source of such acids, only the form of such acids. The same paragraph that references the key component being the added mixture of citric and malic acids, however, continues on to state how, “[i]f desired, other edible acids . . . can also be included in the fruit juice beverages and juice concentrates of the present invention,” *id.* at col. 5, lns. 63-66 (emphasis added), necessarily suggesting that the inventor required the addition of acids to the natural acids of the base juice.

discussed below, Coca-Cola's position is confirmed by the patent prosecution history, which further establishes that P&G had already disclaimed reliance on the acids in the base juice alone.

Coca-Cola also notes that the portion of the paragraph P&G relies upon in column six, fails to mention the "mixture of citric acid and malic acid" subcomponent of the acid component, let alone equate it with the natural acids of the base juice alone. Prior to that point in the specification there was no indication whatsoever that the natural juice acids were even a part of the claimed "acid component." Moreover, the entire disclosure and all illustrative examples expressly contemplate the discrete addition of acids to the base juice. Indeed, as discussed at pages 12-13 of Coca-Cola's opening brief, the phrase "total acids" is used throughout the '847 patent to refer to either (a) the level of acids in the premix only or (b) the combination in the finished juice beverage of added acids and natural juice acids. The phrase "total acids" is never used with reference to the acids present in the base juice alone.

P&G's only other argument based on the patent specification is its reliance on a single statement at the beginning of the patent that "[o]range juice naturally contains a mixture of citric acid and malic acid." Exh. 1 at col. 2, lns. 16-18. What P&G fails to mention to the Court is that statement was not made in connection with the claimed invention. The statement instead appears only in the technical background section and, even then, solely in the context of the prior art's inability to effectively solubilize calcium through direct addition.

Although P&G cites cases such as *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366-67 (Fed. Cir. 2002), for the proposition that there is a heavy presumption that patent claim terms are to be accorded the full scope of their ordinary meaning (P&G Br. at 9), it neglects to inform the Court about any of the exceptions to that general rule. As explained in *CCS Fitness*, "a claim term will not carry its ordinary meaning if the intrinsic evidence shows that the patentee

distinguished that term from prior art on the basis of a particular embodiment, expressly disclaimed subject matter, or described a particular embodiment as important to the invention.” *Id.* at 1378. As discussed at length at pages 14-15 of Coca-Cola’s opening brief, P&G in its patent disparaged and disclaimed direct calcium-supplemented beverages utilizing only the natural acids of the base juice and represented that such acids inhibited calcium solubilization:

Inclusion of such a high level of calcium in orange juice requires consideration of a number of issues.

One is making sure that the calcium-supplemented orange juice has desirable taste qualities. It has been found that direct addition of calcium sources, such as calcium carbonate or calcium hydroxide, to orange juice can generate undesirable cooked/browned off-flavors or cause desirable aroma and flavor compounds to be stripped from the juice. Addition of calcium salts such as calcium chloride at high levels (e.g. above 0.11% calcium chloride) can impart undesirable brackishness to the juice. Calcium chloride addition has also been found to reduce the flavor intensity and quality, as well as the sweetness of orange juice. Accordingly, the calcium source *needs to be added in a way which does not significantly affect the desirable taste and sweetness properties* of orange juice.

Another potential issue is insuring that the calcium is solubilized in the juice. Solubilization of calcium in juice concentrates can be a very significant problem because of the high level of calcium present. *However, solubilization of calcium in single-strength juice products can also be difficult due to the acid systems and other components present in the juice.* Orange juice naturally contains a mixture of citric acid and malic acid. The most thermodynamically stable calcium citrate species which form when a calcium source is directly added to orange juice are also the most insoluble. These insoluble calcium citrate species can precipitate out of the orange juice fairly rapidly. Accordingly, the calcium source also *needs to be added in a way which insures solubilization of the calcium* in both single-strength orange juice beverages and juice concentrates.

Exh. 1 at col. 1, ln. 60 to col. 2, ln. 25 (emphasis added).

As noted above, the '847 patent specification makes clear that the "key component" of the claimed invention was the "acid component" comprising a mixture of acids for "solubilizing the calcium and providing desirable taste properties." *Id.* at col. 5, lns. 56-61. Every calcium-supplemented beverage disclosed in the '847 patent is the result of adding a mixture of citric acid and malic acid to the base juice acids. The preferred way of solubilizing the calcium and providing desirable taste properties disclosed in the '847 patent was to solubilize the calcium in a mixture of citric acid and malic acid and then combine this premix solution with the base juice. *See, e.g., id.* at col. 8, lns. 19-21, 41 and col. 9, lns. 46-48 ("Referring to the FIGURE, an acid component comprising citric acid and malic acid (Acids) is typically dissolved in the appropriate quantity of water," "a source of calcium is added," and "[t]he premix solution containing the solubilized calcium is combined in a mix tank with . . . concentrated orange juice . . ."); *id.* at col. 4, lns. 7-11 (premix solution of solubilized calcium includes "an acid component comprising" citric acid and malic acid); *id.* at col. 9, ln. 65 to col. 10, ln. 3 (premix solution containing a "mixture of citric and malic acid").

The specification also indicates that the calcium and the acids can be directly added to a concentrated fruit juice stripped of aroma and flavor volatiles. *Id.* at col. 11, lns. 11-13. While not the preferred approach, such a calcium-supplemented fruit juice beverage would still contain added acids in addition to those naturally found in the base juice. Not surprisingly, since the patent teaches base juice acids are inadequate for calcium solubilization, the '847 patent fails to disclose any claimed beverage that does not contain acids added to the base juice in some fashion. See pages 16-18 of Coca-Cola's opening brief.

Finally, P&G asserts that statements made in connection with its disclosed but unclaimed method are irrelevant to the product claims found in the '847 patent and that the scope of its

claimed invention should not be limited to such a preferred embodiment. P&G Br. at 16 n.11. However, as noted above and discussed in the following section, P&G disparaged reliance upon the natural acids in base juice alone to solubilize the calcium, both in the patent specification and during patent prosecution. Moreover, as discussed at length at pages 28-34 of Coca-Cola's opening brief, the '847 patent does not provide a legally adequate written description of anything other than the premix addition of acids and it does not contain a legally enabling disclosure of anything other than the premix addition of acids. It certainly does not contain either a written description or an enabling disclosure of any calcium-supplemented fruit juice beverage within the scope of the claims that relies solely upon the natural acids of the base juice alone to effectively solubilize the calcium and impart desirable taste qualities. Indeed, the inventor himself admitted that the only calcium-supplemented fruit juice beverage that he was in possession of at the time he filed and prosecuted the '847 patent was one that employed added acids to first dissolve the calcium to form a premix that was fed into a blend tank and mixed with the concentrated base juice. Exh. 19 at 67-70.

It is well established that claims are to be construed, to the extent possible, to preserve the validity of the claims. *Wang Labs., Inc. v. America Online, Inc.*, 197 F.3d 1377, 1383 (Fed. Cir. 1999). Although claims normally are not construed as being limited to the preferred embodiment, the Federal Circuit has held that claims must be limited to the preferred embodiment when the specification fails to describe or enable an embodiment that is broader than the preferred embodiment. *Biogen, Inc. v. Berlex Labs, Inc.*, 318 F.3d 1132, 1136-40 (Fed. Cir. 2003) (limiting claims to only described embodiment using a singled linked construct and a gene marker even though such limitations were not expressly recited in the claims); *Wang Labs.*, 197 F.3d at 1383 (limiting claims to the only enabled embodiment in the patent specification).